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Notes on the *Eriostemon myoporoides* (Rutaceae) Species Complex, Including New Names and a New Generic Placement in *Philotheca*

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Abstract

On cladistic grounds, and in line with a classification to be adopted for the treatment of Rutaceae in *Flora of Australia*, *Eriostemon myoporoides* DC. (including six currently recognised subspecies) is transferred to the genus *Philotheca* Rudge. Three new subspecies within this complex are described: subsp. *brevipedunculata*, from around Deua National Park in south-east New South Wales; subsp. *euroensis*, from near Euroa in Victoria; subsp. *obovatifolia*, from mountains near the south-east Queensland border. A key to subspecies is included, and brief notes and photographs are provided for all taxa.

Introduction

There is evidence (both morphological and cytological) suggesting the current circumscription of *Eriostemon* Sm. is polyphyletic (Smith-White 1954; Armstrong 1991; Stace *et al.* 1993; Bayly and Ladiges unpublished). Accordingly, Wilson (in press) has proposed a new classification wherein *Eriostemon* is restricted to *E. australasius* Pers. (the type of the genus) and *E. banksii* A.Cunn. ex Endl. (its sister species, Bayly *et al.* 1998), and remaining taxa transferred to the genus *Philotheca* Rudge. In line with this classification, and in preparation for the treatment of Rutaceae in volume 26 of *Flora of Australia*, being prepared by Paul Wilson, PERTH, taxa currently placed in the *E. myoporoides* DC. species complex are here treated under *Philotheca*, and the appropriate combinations published (Wilson, being aware of the impending publication of this present work, has not dealt with these taxa in his classification).

Members of the *Philotheca myoporoides*[1] complex are woody, aromatic shrubs that occur throughout much of south-eastern Australia; largely between the eastern coast and the slopes of the Great Dividing Range, from Kroombit Tops (Queensland) in the north to near Healesville (Victoria) in the south, extending inland to the south and central western slopes and south western plains of New South Wales (terminology follows Jacobs and Pickard 1981). Wilson (1970) listed three characters that, in combination, distinguish members of this complex from other members of section *Erionema*. These are: completely glabrous vegetative parts, leaves ending in an almost cuspidate point, and pedunculate inflorescences.

At present, six subspecies are recognised within *Philotheca myoporoides* (Wilson 1970, as *Eriostemon myoporoides*; Fig. 1). Three further entities are here considered worthy of taxonomic recognition: one from around Deua National Park in south-east New South Wales (Fig. 2), one from near Euroa in north-east Victoria (Fig. 3), and one from the border ranges of south-east Queensland (Fig. 4).

[1] See Taxonomic Treatment for authors of names in the *P. myoporoides* complex. Where authors of other taxa are not stated, they are as given by Wilson (in press).

Fig. 1. Examples of the six subspecies of *Pultenaea myoporoides* recognised by Wilson (1970, as *E. myoporoides*). **A** subsp. *acuta* (MJB 174, Mt. Bunganbil, NSW). **B** subsp. *epilosa* (MJB 270, Boonoo Boonoo National Park, NSW). **C** subsp. *leichhardtii* (MJB 129, Mt. Ngungun, Qld). **D** subsp. *conduplicata* (MJB 268, Macintyres Falls, NSW). **E** subsp. *myoporoides* 'typical form' (MJB 208, Glenbrook causeway, Blue Mountains, NSW). **F** subsp. *queenslandica* (MJB 131 Landsborough, Qld).

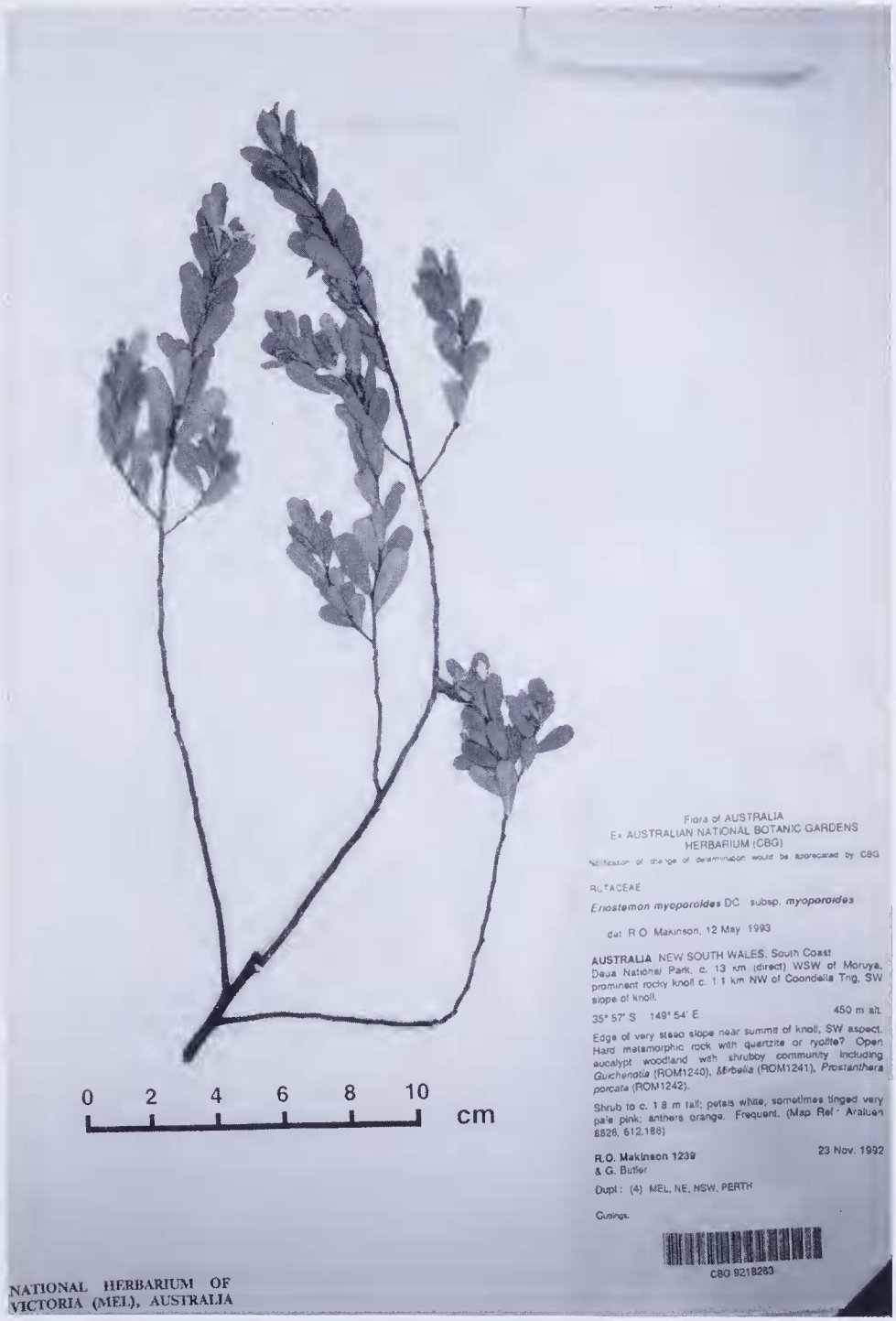

Fig. 2. Holotype of *Philotheca myoporoides* subsp. *brevipedunculata*.

Fig. 3. Holotype of *Philotheca myoporoides* subsp. *euroensis*.

Fig. 4. Isotype of *Philotheca myoporoides* subsp. *obovatifolia*.

For the most part, taxa in the *Philotheca myoporoides* complex are both morphologically and geographically distinct (see notes included in Taxonomic Treatment). Leaf shape and size (Figs 1-4), the degree of folding of the leaf lamina, the number of flowers per inflorescence, inflorescence size (e.g. peduncle length), and the distribution of hairs on the staminal filaments are useful features for the discrimination of taxa. Most taxa overlap on a number of these features, and each is largely defined by some unique combination of attributes.

Preliminary cladistic analysis of morphological and leaf flavonoid data (Bayly and Ladiges unpublished) is equivocal regarding the monophyly of the complex; placing its members (with subsp. *leichhardtii* and subsp. *queenslandica* as sister taxa) as part of a large polychotomy including *Philotheca verrucosa* and a clade comprising *P. buxifolia*, *P. scabra* and *P. hispidula*. None of the features typically used in the classification of section *Eriosema* (to which all these taxa belong) is synapomorphic for members of the *P. myoporoides* complex, and it seems probable that it is paraphyletic.

Given this, there would be some justification for the recognition of some or all taxa in the complex at species level (and several have names available at that level). However, in lieu of a more comprehensive revision, and in the absence of more detailed information of relationships, this present work retains a broad circumscription of *Philotheca myoporoides*, and describes new taxa at the rank of subspecies.

Herbarium Material and Field Collections

The treatment presented here is based on examination of herbarium material from BRI, NE, NSW, CANB, MEL, MELU, and AD (herbarium abbreviations follow Holmgren *et al.* 1990). Between 1991 and 1996, all currently-recognised subspecies were observed in the wild, as was a distinctive population near Euroa, in north-east Victoria.

Taxonomic Treatment

Descriptions are only provided for new taxa. Details of other taxa can be found in Wilson (1970) but, where appropriate, notes are provided to supplement the information in this work. Specimen citations and distribution are deliberately abbreviated for subsp. ***euroenis.***

Philotheca myoporoides (DC.) M. J. Bayly, comb. nov.

Eriostemon myoporoides DC., *Prod.* 1:720 (1824). Type: Nouv. Holl. cote orient, Mus. de Paris 1821. (holotype G-DC (IDC microfiche seen)).

E. amplifolius F.Muell., *Australasian Chem. and Druggist* 7: 64 (1884). Type citation: "on the Upper Genoa some years ago an *Eriostemon* was discovered by Mr. C. Walter" (type not located, see notes in Wilson, 1970).

Philotheca myoporoides, as treated here, includes nine subspecies. The following key to subspecies works best with herbarium material. In particular, the extent of folding of the leaf lamina in the dried state (as used in the key), may not be indicative of the fresh condition (e.g. Victorian forms of subsp. *myoporoides* may be strongly concave to conduplicate in the field, but almost always appear flat on herbarium sheets).

In addition to the taxa discussed below, there is a variant represented by two collections from Mt Stewart in Victoria (*K. Rogers*, MEL *4133*; *J. Turner 1055*, MEL *2030756*) that does not sit comfortably within the present circumscriptions of subspecies (and is not included in the key below). Superficially, these collections most closely resemble members of subsp. *brevipedunculata* (described below). They have

leaves that are obovate with an obtuse apex, 8–15 mm long, 3–6 mm wide, and concave above. Inflorescences have peduncles 0.5–2.5 mm long, and 1–4 (mostly 1–3) pedicels, which are 2–2.5 mm long. The petals are 4–6 mm long, and the staminal filaments are pilose toward the apex. The natural range of this variant, and its relationship to other members of the complex is worthy of further investigation.

Key to Subspecies of *Philotheca myoporoides*

1. Leaves 13–30 mm long, 5–10 mm wide, oblong-elliptic to obovate; inflorescences of 1(–3) flowers; peduncles to 2 mm long, sometimes scarcely visible; pedicels 4–8 mm long (south-east NSW).....**4.** subsp. ***brevipedunculata***
1. Without the above combination of features 2
2. Leaves strongly conduplicate when dry.....3
2. Leaves flat or somewhat concave when dry 5
3. Leaves < 35 mm long (Vic.).....**5.** subsp. ***euroeusis***
3. Leaves mostly > 40 mm long (NSW, Qld).....4
4. Branchlets prominently glandular-verruose; leaves often >10 mm wide (south-east NSW), some populations of the mountain form of .....**1.** subsp. ***myoporoides***
4. Branchlets almost smooth; leaves 4–10 mm wide (Granite Belt of north-east NSW and south-east Qld).....**7.** subsp. ***conduplicata***
5. Leaves oblong to obovate, flat to somewhat concave, 20–50 mm long, 4–10 mm wide, midrib evident on lower surface; inflorescences of 1–3 (mostly solitary) flowers; pedicels 6–11 mm long; stamen filaments usually (but not always) long-pilose toward the apex (Glasshouse Mountains, Cania Gorge and Kroombit Tops areas of south-east Qld.) ..... **8.** subsp. ***leichhardtii***
5. Without the above combination of features 6
6. Leaves more or less flat when dry 7
6. Leaves somewhat concave when dry.....8
7. Leaves oblong to elliptic (Vic. and NSW) .....**1.** subsp. ***myoporoides***
7. Leaves obovate (Mt Barney area of south-east Qld.) .....**6.** subsp. ***obovatifolia***
8. Leaves obovate; apex of staminal filaments glabrous or with a few hairs ('Granite Belt' of north-east NSW and south-east Qld).....**3.** subsp. ***epilosa***
8. Leaves (often narrowly) oblong, elliptic or oblanceolate; apex of staminal filaments pilose 9
9. Leaves (15–)40–45(–52) mm long, 2–8 mm wide, deeply to slightly concave when dry; inflorescences of up to 5 flowers (but often 1 or 2-flowered); peduncle to 7 mm long; pedicels 3–11 mm long; apex of stamen filaments pilose (central and western NSW).....**2.** subsp. ***acuta***
9. Leaves 10–30 mm long, 1.5–4 mm wide, deeply concave when dry; flowers solitary; peduncle to 5 mm long; pedicels 3–5 mm long; apex of stamen filaments long-pilose (near-coastal areas of south-east Qld).....**9.** subsp. ***queenslandica***

1. *Philotheca myoporoides* subsp. ***myoporoides***

E. cuspidatus A. Cunn., in B. Field, *Geogr. Mem. N.S. Wales* 331 (1825). Type: Cox's River, *A. Cunningham 54*, Oct. 1882. (holotype K, *fide* Wilson 1970).

E. nerifolius Sieber ex Spreng., *Syst. Veg.* 4/2: 164 (1827). Type: Fl. Novae Holl, *F. W. Sieber 306* (isotypes K (*fide* Wilson 1970), MEL *4537*, *4190).*

E. lancifolius F.Muell., *Trans. Vict. Inst.* 1: 32 (1855). Type citation: "on the stony summit of Mt. McFarlan, at an elevation of nearly five thousand feet on Mt. Tambo and the Upper Mitta Mitta". (syntypes K (*fide* Wilson 1970), MEL *4165* (?mixed collection, Mt Tambo and upper Mitta Mitta, 4-5000'); MEL *4157*, *4176* (Mt Tambo); MEL *408*, *4177*, *4178* (Mt McFarlan)

Subspecies *myoporoides* is the most widespread and most variable member of the complex. It occurs along the Great Dividing Range from near Denman in New South Wales to near Healesville in Victoria (Queensland populations included in subsp. *myoporoides* by Wilson (1970) are described here as subsp. *obovatifolia*).

The typical, linear-leaved form of subspecies *myoporoides* (Fig. 1E) occurs in New South Wales from near Denman southward. It is often associated with watercourses and is most commonly collected in the Blue Mountains, along the Nepean and Bargo Rivers and their tributaries, and in isolated areas along the coastal ranges south to about Batemans Bay. This form is probably distinct from a form with thicker and more oblong-elliptic leaves, that occurs in the mountains of the ACT, southern New South Wales and eastern Victoria (to which the name *Eriostemon lancifolius* F.Muell. applies). These mountain populations (the 'mountain form') are between themselves variable, and occur in a range of habitats, from exposed and/or rocky sites in subalpine woodland (e.g. Lake Mountain in Victoria, Tinderry Range in New South Wales), to sheltered sites on deep soil in tall open-forest (e.g. near Toolangi in Victoria). Wilson (1970) suggested that plants of this latter, mountain form also occur in the Blue Mountains (to which the name *E. cuspidatus* A. Cunn. could apply), but any material I have seen from this region appears to have more affinity with typical *P. myoporoides* than with the mountain form (although I have not seen the type of *E. cuspidatus*).

While the extreme forms of subsp. *myoporoides* are quite distinct, the pattern of variation within this taxon is not straightforward. There are a range of localised forms (within or in addition to those mentioned here), and the nature of variation between these populations requires clarification.

2. *Philotheca myoporoides* subsp. ***acuta*** (Blakely) M. J. Bayly, comb. nov.

Eriostemon myoporoides var. *acutus* Blakely, *Contr. N.S.W. Natl Herb.* 1: 124 (1941); *E. myoporoides* subsp. *acutus* (Blakely) Paul G. Wilson, *Nuytsia* 1: 40 (1970). Type: 10 mi [16 km] north of Grenfell, *R. H. Cambage*, 1.x.1900. (holotype NSW *68728*).

E. affinis Sprague, *Gard. Chron. III.* 33: 307 (1903). Type: cultivated Kew. (holotype K (photo seen)).

[*E. myoporoides* var. *minor* auct. non Benth: Benth., *Fl. Austral.* 1: 333 (1863), *p. p.* (Lachlan River specimen).]

This subspecies occurs on the central and south western slopes, and north and south western plains of New South Wales. It is a bushy shrub to c. 1.8 m and grows in rocky areas on hills, especially on sandstone (Norris and Thomas 1991). It displays some variation in leaf size, ranging from 15 mm long and 2 mm wide, to 52 mm long and 8 mm wide. It can be distinguished from subsp. *myoporoides* by its smaller, oblong-elliptic leaves, and its inflorescences, which have 1–2(–5) [rather than (1–)3–9(–13)] flowers. The type of *E. affinis* has leaves and peduncles that, in terms of length, are at the upper limits of those found in subsp. *acuta*, but the lamina shape and degree of concavity suggest that it is best placed within this taxon.

3. *Philotheca myoporoides* subsp. ***epilosa*** (Paul G. Wilson) M. J. Bayly, comb. nov.

Eriostemon myoporoides subsp. *epilosus* Paul G. Wilson, *Nuytsia* 1: 41 (1970). Type: Wallangarra, Queensland, *S. L. Boorman*, Nov. 1906. (holotype NSW *69255*; isotype: NSW *68741*).

Subspecies *epilosa* is a compact, low-growing shrub to c. 1 m high, and often grows in thin soil pockets on exposed granite surfaces, in the granite belt of north-east New South Wales and south-east Queensland. It is broadly sympatric with subsp. *conduplicata* (Fig. 1d) but, as noted by Wilson (1970), there is no evidence of intergradation

between these taxa. Subspecies *epilosa* (Fig. 1B) has glandular-verrucose branchlets, obovate leaves about 2 cm long, inflorescences with predominantly solitary flowers, and staminal filaments that are epilose or with a few hairs at the apex. Subspecies *conduplicata* (Fig. 1D) has comparatively smooth branchlets, elliptic leaves up to c. 7 cm long that tend to be conduplicate and falcate, inflorescences with 1–4 pedicels and stamen filaments that are sparsely pilose at the apex. A conservation code of 3RCa has been proposed (Richards and Hunter 1997).

4. *Philotheca myoporoides* subsp. ***brevipedunculata*** M. J. Bayly, subsp. nov.

Ramuli dense verrucosi. Folia oblonge elliptica vel leniter obovata, apice obtusa vel truncata, 15–25 mm longa. Pedunculi ad 2 mm longi, interdum vix manifesti, vel absentes. Pedicelli 1-3 sed plerumque solitarii, 4-8 mm longi, ad basim c. 3-bracteolati.

Type: New South Wales: South Coast: Deua National Park, c. 13 km (direct) WSW of Moruya, 35°57'S, 149°54'E, *R. O. Makinson 1239 & G. Butler*, 23.xi.1992. (holotype MEL *717249* (Fig. 2); isotypes NE, NSW, CANB (CBG *9218263*), PERTH.

Shrub to 1.8 m high. *Branchlets* densely glandular-verrucose, glabrous. *Leaves* leathery, more or less concolorous, oblong-elliptic to obovate, 13–30 mm long, 5–10 mm wide, flat to somewhat concave above, glabrous; margins sometimes tinged maroon; apex rounded, truncate or sub-acute, apiculate. *Inflorescences* axillary, 1(–3)-flowered; peduncles very short to apparently absent, 0–2 mm long; pedicels slender, 4–8 mm long, c. 3 (sometimes caducous) bracteoles at base. Sepals very broad-ovate, c. 1 mm long; margins often ciliolate. *Petals* oblong-elliptic, c. 7 mm long, mostly white but outer surface often tinged with pink (especially in bud), not persisting in fruit, glabrous but minutely papillose within. *Staminal filaments* ciliate toward base, sparsely long-pilose in upper half (glabrous or only shortly pilose at Round Hill); anthers irregularly- to bi-glandular on abaxial surface, with a short, white apiculum. *Ovary* 0.75–1.0 mm long, glabrous; style 1.25–1.50 mm long at maturity. *Cocci* erect, prominently rostrate. *Seed* as in subsp. *myoporoides* (described and illustrated by Wilson 1970).

Distribution and Habitat

Occurs in south-east New South Wales in the Mt Donovan area of Deua National Park, at Round Hill south of Sassafras, Enchanted Hill north of Williamsdale, and in Little Forest north-west of Milton (Paul Wilson pers. comm., based on *J. Pickard* 2550 (NSW)). Notes accompanying herbarium specimens indicate that subsp. *brevipedunculata* grows near the summits of mountains in skeletal soil on rhyolite.

Notes

This subspecies differs from subsp. *myoporoides*, the only other subspecies found in south-east New South Wales, in having very short leaves and a peduncle not exceeding 2 mm long (and often so reduced that it is not readily visible). Some forms may bear a superficial resemblance to subsp. *epilosus*, but these are also distinguished by their short peduncles and the sparse, long-pilose hairs toward the apex of their stamen filaments. Collections from Enchanted Hill, Little Forest Trig (Paul Wilson pers comm.) and Round Hill differ slightly in leaf shape from the typical form. The Little Forest Trig specimen is sterile and the single flowering specimen from Round Hill (*E.F. Constable*, NSW 66252) has staminal filaments that are glabrous or only shortly hairy toward the apex.

Etymology

The epithet is Latin-derived (*brevi* = short, *pedunculatus* = pedunculate), and refers to the characteristically short peduncles found in the inflorescences of this subspecies.

Conservation Status

Populations of subsp. *brevipedunculata* are known from Deua National Park, Budawang Wilderness (Little Forest) and Morton National Park (Round Hill). The only collection from outside a reserve is that from Enchanted Hill. Notes on herbarium specimens suggest that this taxon can be locally common. It possibly occurs throughout more remote areas of Deua and nearby National Parks. A conservation code (Briggs and Leigh 1988) of 3RC is probably appropriate, but further surveys of the distribution and abundance of this subspecies would be worthwhile.

Selected Specimens Examined

New South Wales: Prominence, 1.9 km N from Coondella trig point, c. 16 km WSW from Moruya, *N. G. Walsh 1883*, 7.xii.1987 (MEL, CANB); Deua National Park, peak 3 km due W of Bundogeran Hill, *D. E. Albrecht 5314*, 1.i.1993 (MEL); Deua National Park, prominent rocky peak 2 km due N of Coondella trig, 21.x.1990, *D. E. Albrecht 4586* (MEL); Deua National Park, 1.8 km north-east of summit of Mt Donovan, *P. Beesley 401*, 28.iii.1985 (CANB); Round Hill, 3 miles S of Sassafras, *E. F. Constable*, 20.ix.1961 (NSW *66252*); Rocky Gully, northern slopes of Enchanted Hill, 13 km N of Williamsdale, *B. J. Lepschi 842*, 2.viii.1992 (MEL).

5. ***Philotheca myoporoides*** subsp. ***euroensis*** M. J. Bayly, subsp. nov.

Eriostemon myoporoides sensu J.H. Willis, *Handb. Pl. Victoria* 2: 332 (1973) *p. p.*, *non* DC. (1837).

Ramuli dense verrucosi. Folia late elliptica, 15–35 mm longa, 6–12 mm lata, conduplicata, falcata. Pedunculi conspicui, ad 7 mm longi. Pedicelli 1–4.

Type: Victoria: Garden Range, Euroa. *R. Thomas 108*, 20.v.1989. (holotype MEL *717487*) (Fig. 3).

Open *shrub* to 1 m high. *Branchlets* densely glandular-verrucose, green or sometimes tinged with maroon, glabrous. *Leaves* leathery, more or less concolorous, dotted with many small oil glands, broad elliptic, 15–35 mm long, 6–12 mm wide, strongly conduplicate, falcate, glabrous; midrib faintly to scarcely visible on lower surface; margins sometimes tinged maroon; apex obtuse, apiculate. *Inflorescences* axillary, 1–4 flowered; peduncles robust, angular, 0–7 mm long; pedicels, 3–6 mm long, with c. 3 or 4 ± caducous bracteoles at base. Sepals sub-orbicular to broad-ovate, c. 1 mm long, margins minutely ciliolate. *Petals* elliptic to slightly obovate, 5–7.5 mm long, white or tinged with pink, pink in bud, not persisting in fruit, glabrous but minutely papillose within. *Staminal filaments* ciliate for most of their length, sparsely pilose or glabrous toward the apex; anthers usually with two prominent glands on abaxial surface and a short white apiculum. *Ovary* c. 1.5–2 mm long, glabrous; style c. 1.5–2 mm long at maturity. *Cocci* prominently beaked.

Distribution and Habitat

Known only from an area near Euroa in Victoria, where it grows in shallow soil among granite boulders.

Notes

Subspecies *euroensis* most closely resembles forms of subsp. *myoporoides* from Victoria and southern New South Wales. Collections of subsp. *euroensis* have a uniform appearance, and are clearly distinguished from this latter taxon by their shorter (less than 35 mm long), broad-elliptic leaves, in which the midrib is faintly to scarcely visible on the abaxial surface, and which are strongly conduplicate and falcate when dry. Inflorescences of subspecies *euroensis* have 1–4 flowers, while those of subsp. *myoporoides* are (1–)3–9(–13)-flowered. The closest known populations of subsp. *myoporoides* are at Lake Mountain and near Toolangi to the south, and in the areas around Mt St Bernard, Mt Hotham, Mt Feathertop, Mt Cope and Falls Ck to the east.

Etymology

The epithet refers to the known distribution of this subspecies, near the town of Euroa.

Conservation Status

Subspecies *euroensis* is known only from four collections, and these were presumably taken within a few kilometres of each other (two certainly being from the same plant). A limited field search (two days) found only a single plant. More extensive study of this area (Ray Thomas pers. comm.) revealed a second plant nearby, but it appears this latter plant has since died. Further surveys in this and surrounding areas are required to determine the size and the distribution of populations. Given the relatively localised pockets of suitable habitat in this area, and the apparent rarity of this taxon, a conservation code (Briggs and Leigh 1988) of 2E is appropriate.

Specimens Examined

Victoria: Euroa area, *R. Thomas 20*, 6.xi.1988 (MEL); Mountain Hut Ck., Strathbogie (MEL *5219*); on and among granite rocks at Kelvin View, *J. H. Willis*, 12.vii.1951 (MEL).

6. *Philotheca myoporoides* subsp. ***obovatifolia*** M. J. Bayly, subsp. nov.

E. myoporoides subsp. *myoporoides p. p.* (Queensland populations) *sensu* Paul G. Wilson, *Nuytsia* 1: 40 (1970).

Ramuli verrucosi. Folia late obovata, 35–60 mm longa, 14–30 mm lata, plus minusve plana, apice obtusa vel leniter retusa, mucronata. Pedunculi conspicui, ad 10 mm longi. Pedicelli 1–5, ad basim c. 3 bracteolis caducis instructis.

Type: Queensland: Moreton District: Mt. Ernest 28°18'S, 152°42'E, *P. I. Forster 12364 & G. Leiper*, 10.xi.1992. (holotype BRI (AQ *5149469*); isotype MEL *719180* (Fig. 4)).

Woody *shrub* to c. 1 m high. *Branchlets* glandular-verrucose, green, glabrous. *Leaves* leathery, more or less concolorous but usually slightly paler on the lower surface, dotted with many small oil glands, broad-obovate, 35–60 mm long, 14–30 mm wide, more or less flat, glabrous; midrib prominent on lower surface, yellow; apex obtuse or sometimes very slightly retuse, shortly mucronate. *Inflorescences* axillary, 1–5-flowered; peduncles robust, angular, 1–10 mm long; pedicels 4–10 mm long, with 3 caducous bracteoles at base. Sepals broadly deltate to sub-orbicular, c. 1 mm long, margins sometimes ciliolate, not tinged with red. *Petals* oblong-elliptic, c. 8–9 mm long, white inside, tinged with pink outside, not persisting in fruit, papillose within. *Staminal filaments* ciliate for most of their length and with a few longer hairs toward the apex; anthers bi- or irregularly-glandular on abaxial surface, with a tapered, white apiculum. *Ovary* c. 1.0–1.5 mm long, glabrous. *Cocci* prominently beaked. *Seed* not seen.

Distribution and Habitat

This subspecies occurs in Queensland and is known only from three mountains (Mt Barney, Mt Lindesay and Mt Ernest) near the south-east border with New South Wales. Notes accompanying herbarium specimens indicate that this subspecies grows in heath or woodland (often dominated by *Leptospermum* spp.) on rhyolite.

Notes

Subspecies *obovatifolia* can be distinguished from subsp. *myoporoides* (in which it was included by Wilson (1970)) by its large, obovate leaves (Fig. 4), in which the midrib is strongly pronounced on the lower surface, and in which the apex is rounded and distinctly mucronate. Inflorescences of subsp. *obovatifolia* often have fewer flowers (1–5) than subsp. *myoporoides* [(1–)3–9(–13)]. Superficially (at least on herbarium sheets), subsp. *obovatifolia* most closely resembles specimens of the thick and coriaceous-leaved 'mountain form' of subsp. *myoporoides* (see notes under that taxon). There is a disjunction of several hundred kilometres between known occurrences of subsp. *obovatifolia* and the northernmost, lincar-leaved (Fig. 1E) populations of subsp. *myoporoides* (north of Sydney), and an even greater disjunction between the former and populations of the 'mountain form' of subsp. *myoporoides*.

Etymology

The epithet is Latin-derived (*obovatus* = obovate, *folium* = leaf) and refers to the characteristic shape of the leaves in this subspecies.

Conservation Status

The known distribution of subsp. *obovatifolia* (on the three adjacent peaks of Mt Barney, Mt Lindesay and Mt Ernest) lies wholly within Mount Barney National Park. Notes accompanying herbarium specimens indicate that this subspecies can be locally common and, despite its limited distributional range, faces no identifiable threat. A conservation code (Briggs and Leigh 1988) of 2RCt is appropriate.

Selected Specimens Examined

Queensland: Mt. Barney, *S. L. Everist 1390*, 13.x.1935 (BRI); Mt. Lindesay, *N. Michael 2218*, 14.vii.1935 (BRI); Mt. Barney, *S. L. Everist 4137*, 25.ix.1949 (BRI); Mt. Barney, *W. McDonald*, 5.xii.1974 (BRI 491923); Mt. Barney, *C. Bell 538*, Jun. 1972 (BRI); Mt. Ernest, *P. I. Forster 12364*, 10.xi.1992 (BRI).

7. ***Philotheca myoporoides*** subsp. ***conduplicata*** (Paul G. Wilson) M. J. Bayly, comb. nov.

Eriostemon myoporoides subsp. *conduplicatus* Paul G. Wilson, *Nuytsia* 1: 41 (1970). Type: Howell, New South Wales, *J. H. Maiden and J. L. Boorman*, Aug. 1905. (holotype NSW *68742* (*fide* Wilson 1970))

This subspecies occurs in the border ranges of north-east New South Wales and in adjoining regions of south-east Queensland. It is an openly-branched shrub to c. 1.4 m high, often with leaves concentrated toward the apices of branches, and grows in the understorey of woodland and open forest on granite. It can be distinguished from subsp. *myoporoides* (to which it is most similar), by its comparatively smooth (rather than prominently glandular) branchlets, and by its leaves, which are strongly conduplicate and falcate (at least when dry, Fig. 1D). Subspecies *conduplicata* is broadly sympatric with, but clearly distinct from subsp. *epilosa* (see notes under that taxon). There are few recent collections of subsp. *conduplicata*, and limited field observations suggest that it is quite rare. The conservation status of this subspecies is worthy of further investigation, and tentative conservation code (Briggs and Leigh 1988) of 3RC is appropriate.

8. ***Philotheca myoporoides*** subsp. ***leichhardtii*** (Benth.) M. J. Bayly, comb. nov.

Eriostemon trachyphyllus var. *leichhardtii* Benth., *Fl. Austral.* 1: 333 (1863); *E. myoporoides* subsp. *leichhardtii* (Benth.) Paul G. Wilson, *Nuytsia* 1: 41 (1970). Type: Brroa [= Mt. Beerwah, Glasshouse Mountains, Queensland], *L. Leichhardt*. (holotype K (*fide* Wilson 1970); isotype MEL *4536*).

Eriostemon glasshousiensis Domin., *Bibl. Bot.* 89: 286 (1926). Type: Glasshouse Mountains (Slopes of Mt. Coonowrin), *C. T. White*, Sept. 1909. (isotype? BRI *04244* (*fide* Wilson 1970)).

[*E. scaber* auct. non Paxton: Benth., *Fl. Austral.* 1: 334 (1863) *p. p.* (Queensland specimen); Bailey, *Queensland Fl.* 1:91 (1899).]

[*E. myoporoides* var. *minor* auct. non Benth.: Benth., *Fl. Austral.* 1: 333 (1863) *p. p.*, Queensland specimen cited.]

Collections subsequent to the publication of Wilson's (1970) revision, show that this subspecies not only occurs in the Glasshouse Mountains but also further north, around Mt Cooroora [*P. I. Forster 16121*, BRI (AQ *634516*)], Cania Gorge (*M. Olsen 3538 and N. B. Byrnes*, BRI *222911*) and Kroombit Tops [*N. Gibson, TO11147*, BRI (AQ *547610*)]. Specimens from more northerly localities may have larger, oblong-elliptic (to slightly obovate) leaves, which can be somewhat glaucous. These specimens show variation in the number of flowers per inflorescence (some having one to several, rather than strictly solitary flowers), peduncle length (some either very shortly or non-pedunculate) and in the stamen filaments (some not being prominently long-pilose toward the apex).

As noted by Wilson (1970), material from the Glasshouse Mountains (Fig. 1C) can approach that of subsp. *queenslandica* (Fig. 1F). In this area the two taxa (which probably form a monophyletic group, Bayly and Ladiges unpublished) are broadly sympatric. From field observations in this region, subsp. *leichhardtii* is an erect, medium-sized shrub (to c. 1.5 m tall), restricted to rocky places on the mountains themselves, while subsp. *queenslandica* is a low subshrub (often c. 30–40, but up to c. 80 cm) occurring in sites of lower elevation in heath or wallum, or in the heathy understorey of open forests and woodlands. I have seen no specimens that could not be readily assigned to one taxon or the other.

9. *Philotheca myoporoides* subsp. ***queenslandica*** (C.T. White) M. J. Bayly, comb. nov.

Eriostemon queenslandicus C.T. White, *Proc. Roy. Soc. Queensland*. 53: 207 (1942); *E. myoporoides* subsp. *queenslandicus* (C.T. White) Paul G. Wilson, *Nuytsia* 1: 41 (1970). Type: Caloundra, Queensland, *S. L. Everist 454*, Aug. 1933. (holotype BRI *011386* (*fide* Wilson 1970)).

This subspecies is a distinctive, low-growing subshrub from coastal areas of south-east Queensland. It is most similar to subsp. *leichhardtii* (see notes under that subspecies).

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